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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,690	07/31/2003	Patrick Lailly	612.42948X00	7677
20457	7590	03/25/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			TAYLOR, VICTOR J	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,690	Applicant(s) PATRICK LAILLY	
	Examiner Victor J. Taylor	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-47 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Office action</u> . |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, the processing steps found in the claims for the modeling method steps using the Huber LP-Norms and equations for the computer method modeling processing steps must be shown in a block and level diagram, flow chart, schematic or other suitable drawing.

The specification must be amended to describe the new drawing.

The new drawing method processing steps must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because it is not in the correct US abstract format and is of multiple paragraphs and uses method claim structure as copied from the French application and contains multiple typographical errors. A correct abstract in the one single page with the single paragraph in 50 to 150 words double-spaced is required. Correction is required. See MPEP § 608.01(b).
3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant.

I. Art A of Partyka et al., US 6,131,071 in class 702/016 is cited for the spectral decomposition for seismic data with steps for a time series Fourier transformation and teaches spectral decomposition with processing step to calculate the spectral value using the j, k matrix in figure 8 and teaches the H function with fitting to the tuning cube with off set distances and fitting the equation in line 40 to the matrix form in line 50 of column 34 and further teaches phase related signal attributes and using the least squares estimate of the phase at the center of the sliding analysis window using the equations and derivatives found in lines 1-65 of column 36.

II. Art B of Crider et al., US 6,263,284 in class 702/014 is cited for the selection of seismic modes through amplitude characteristics using AVO analysis 325 in figure 3 and teaches vector estimates of the signal data parameters and teaches the use of the matrix containing angle-dependent quantizes in line 50 column 10

Quayle Action

5. This application is in condition for allowance except for the following formal matters:

I. The objections to the drawing as cited above.

II. The objection to the abstract as cited above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11-453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Allowable Subject Matter

6. Claims 1-18 are allowed. The applicant canceled claims 19-25.
7. The following is an examiner's statement of reasons for allowance:

The method of estimating from data obtained by exploration of a zone of a heterogeneous medium with a model representative of a distribution in the zone of at least one physical quantity with the model being free of a presence of correlated noises that may be contained in the signal data in claim 10 with method modeling steps for "acquiring measurements giving information about physical characteristics of the zone by following a predetermined experimental protocol"...[and] with steps of "specifying a noise modeling operator which associates with a model of each physical quantity the synthetic data that constitute a response of the model with the measurements and the synthetic data belonging to a data space"...[and] with for" selecting for each correlated noise referenced by a subscript j ranging from 1 to J a noise modeling operator which associates a correlated noise with a noise generating function belonging to a predetermined spaced of the noise generating functions (B_j)"...[and] with steps "specifying a norm or of a semi-norm in the data space"...and/or in combination with the steps wherein "specifying a semi-norm in the space of the noise-generating functions for

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which each noise modeling operator establishes substantially an isometric relation between the space of noise generating functions and their data space"...[and/or] "defining a cost function quantifying a difference between the measurements on one hand and a superposition of a model response and of the correlated noise associated with the noise generating function on the other hand"...[and in combination] with the steps for "adjustment of the model and of the noise generating functions by minimizing the cost function by means of an algorithmic method taking advantage of isometric of properties of the noise modeling operators" to produce the noise reduced seismic modeled data is not found in the cited art of record.

The prior Art A of teaches the spectral decomposition for seismic data with steps for a time series Fourier transformation and teaches spectral decomposition with processing step to calculate the spectral value using the j, k matrix in figure 8 and teaches the H function with fitting to the tuning cube with off set distances and fitting the equation in line 40 to the matrix form in line 50 of column 34 and further teaches phase related signal attributes and using the least squares estimate of the phase at the center of the sliding analysis window using the equations and derivatives found in lines 1-65 of column 36.

The prior Art B of Crider et al., teaches the selection of seismic modes through amplitude characteristics using AVO analysis 325 in figure 3 and teaches the vector estimates of the signal data parameters and teaches the use of the matrix containing angle-dependent quantizes in line 50 column 10

Therefore, the prior art Partyka and The prior art of Crider in combination or alone does not teach the present limitation of the claimed combination limitation.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 12-47 are dependent on the allowed independent claim 10 and are allowed at least for the reasons cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

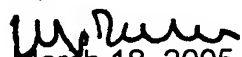
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 517-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VJT


March 18, 2005.


John Barlov
Supervisory Patent Examiner
Technology Center 2800